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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/566,529	06/05/2006	Stephan Bolz	S4-03P04584	5910

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EXAMINER	
CLARK, CHRISTOPHER JAY	
ART UNIT	**PAPER NUMBER**
2836	
MAIL DATE	**DELIVERY MODE**
11/15/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/566,529	BOLZ ET AL.	
	Examiner	Art Unit	
	Christopher J. Clark	2836	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on *05 June 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *7-13* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *7-13* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *30 January 2006* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *3/3/2006 and 2/22/2006*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Information Disclosure Statement

1. The information disclosure statements (IDS) submitted on March 2, 2006, February 22, 2006, and June 5, 2006 in regards to the application filed June 5, 2006. The submission is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 7-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gscheidle (U. S. Patent 6,031,705) in view of Williams (U. S. Patent 6,172,383).

4. In re Claim 7, Gscheidle teaches a device for protecting an electronic module disposed in a control device in a multi-voltage on-board electrical system having an accumulator with a low on-board electrical system voltage against short circuiting to a high on-board electrical system voltage as seen in Figure 1, comprising:

- a MOSFET (T2) transistor having a drain source path inserted between a control device connection (Ue1) and a connection of the electronic module (Ua1), and with:
    - a source connected to the connection of the electronic module
    - a drain connected to the control device connection

- a gate

- a Zener diode (D5) connected between said gate and said source of said MOSFET transistor
- a gate resistor (R4) connected between said gate of said MOSFET transistor and a positive pole of the first accumulator (Ubatt)

5. The teaching of Gscheidle does not teach a diode connected in parallel with the gate resistor.

6. Williams teaches as seen in Figures 8A-D that it is known to connect a diode across a gate resistor for conducting current in a direction away from the gate in order to more rapidly turn off the transistor (Column 3 Lines 25-36).

7. It would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize the gate diode as taught by Williams in order to turn off the protective transistor more rapidly when a fault voltage is detected and thus reduce the risk of damage to the protected circuitry.

8. The examiner would like to note that neither the teaching of Gscheidle or Williams specifically teach implementing the protective device as discussed thus far in a multi-voltage system. The applicant's disclosure in reference to the protective system as taught by Gscheidle is said to possess too great of a delay to be provided in a multi-voltage system. However, upon modification with the teaching of Williams, these short comings are addressed and it is therefore considered by the examiner that the protective device of Gscheidle as modified by Williams is suitable for use in a multi-voltage system.

9. In re Claim 8, Gscheidle teaches that the electronic module is disposed in control device for controlling low-power consumers or for processing/transmitting data (Column 1 Lines 15-47).

10. In re Claim 9, Gscheidle teaches that Zener diode is configured with a breakdown voltage lower than a maximum permitted gate source voltage of said MOSFET transistor (Column 3 Lines 55-57).

11. In re Claim 10, Gscheidle as modified by Williams discloses the claimed invention except for the source voltage of the transistor being specifically limited to a value which is the difference of the accumulator voltage and the threshold voltage. It would have been obvious to one having ordinary skill in the art at the time of the invention was made to limit the source voltage of the transistor (which is also the voltage being supplied to the protected circuitry) to a value that will not harm the circuitry being protected since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F. 2d 272, 205 USPQ 215 (CCPA 1980).

12. In re Claim 11, Gscheidle teaches that upon detection of an over voltage condition, the gate voltage is reduced by shorting the gate voltage via transistor T1 (Column 4 Lines 7-12). Upon modification by Williams, the shorting of this voltage would result in the gate diode being activated and therefore limiting the voltage across the gate resistor/diode parallel pair to the diode's activation voltage. As the voltage of the accumulator is being reduced as a result of being shorted, it should be easily seen that the voltage supplied to the gate would not be higher than the activation voltage of the diode in combination with the reduced accumulator voltage.

13. In re Claim 12, Gscheidle teaches that the protective circuit is integrated in an ASIC (Column 1 Lines 15-47).

14. In re Claim 13, Gscheidle teaches that the multi-voltage on-board electrical system is a motor vehicle on-board electrical system (Column 1 Lines 15-47).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher J. Clark whose telephone number is 571-270-1427. The examiner can normally be reached on M-F, 7:30-5:00 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Sherry can be reached on 571-272-2084. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

CJC
11/9/2007

11/13/07

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